

COLONY ARRAY-BASED cDNA LIBRARY NORMALIZATION BY
HYBRIDIZATIONS OF COMPLEX RNA PROBES AND GENE SPECIFIC
PROBES

ABSTRACT

5 Each cell normally has a widely differing number of mRNA transcribed for
each gene. Consequently, a full-length cDNA library constructed from the mRNA
would also have a widely differing number of cDNA for each gene. A normalized
library of the full-length cDNA of a cell is useful for basic, applied, industrial, and
medical research. This invention provides for a method for constructing a normalized
10 full-length cDNA library by probing the members of a non-normalized cDNA library
with a library of probes generated from mRNA in order to identify the cDNA of genes
that have low or high expression. A collection of the cDNA from the library of the
genes that have low expression would constitute a normalized library of these genes.
This invention also provides for a method to reduce the number cDNA of genes that
15 have high expression represented by probing these cDNA with a library of probes
generated from a small randomly selected number of these cDNA. cDNA that
hybridize are represented within this small randomly selected number of cDNA, while
cDNA that do not hybridize are not represented. The latter cDNA can undergo further
such probing to further reduce the number of cDNA represented. The cDNA from the
20 library of the genes that have low expression and the randomly selected highly
expressed cDNA would constitute a normalized library of these genes.